## SEQUENCE LISTING

<120> Method of Detecting and Quantitating Microorganism Having Specific Function and Its Gene From Natural Environment, Novel 16S rRNA Gene Data and Probes

<130> P21989 10/049,626 <140> <141> 2002-02-22 <150> PCT/JP00/05711 2000-08-24 <151> <160> 9 <170> PatentIn version 3.1 <210> 1 1532 <211> <212> DNA Cycloclasticus pugetii <213> <400> agagtttgat catggctcag attgaacgct ggcggcatgc ctaacacatg caagtcgaac 60 ggaaacagaa tgcagcttgc tagcaggcgg tcgagtggcg gacgggtgag ttatgcatag 120 gaatccgccc gatagtgggg gacaacctcc tgaaaacgct gctaataccg cataatcccg 180 cgggggcaaa gacggggacc ttcgggcctt gctctaatgg atgagcctac aggggattag 240 gtagttggtg aggtaacggc tcaccaaggc aacgatccct agctggtttg agaggatgat 300 cagccacact gggactgaga cacggcccag actcctacgg gaggcagcag tggggaatat 360 tgcacaatgg aggaaactct gatgcagcaa tgccgcgtgt gtgaagaagg ccttagggtt 420

480

540

600

gtaaagcact ttcagtaggg aggaaaagtt taagggtaat aacccttagg ccctgacgtt

acctacagaa gaagcaccgg ctaactccgt gccagcagcc gcggtaatac ggagggtgca

agcgttaatc ggaattactg ggcgtaaagc gcgcgcaggc ggttaaacaa gtcagatgtg

aaagccccgg	gctcaacctg	ggaactgcat	ttgaaactgg	ctagctagag	tgtggtagag	660
gagagtggaa	tttcaggtgt	agcggtgaaa	tgcgtagata	tctgaaggaa	caccagtggc	720
gaaggcggct	ctctggacca	acactgacgc	tgaggtgcga	aagcgtgggt	agcaaacggg	780
attagatacc	ccggtagtcc	acgccgtaaa	cgatgtcaac	taactgttgg	gcgggtttcc	840
gcttagtggt	gcastaacgc	aataagttga	ccgcctgggg	agtacggccg	caaggctaaa	900
actcaaatga	attgacgggg	gcccgcacaa	gcggtggagc	atgtggttta	attcgatgca	960
acgcgaagaa	ccttacctac	ccttgacata	cagagaactt	tctagagata	gattggtgcc	1020
ttcgggaact	ctgatacagg	tgctgcatgg	ctgtcgtcag	ctcgtgtcgt	gagatgttgg	1080
gttaagtccc	gtaacgagcg	caacccttat	ccttagttgc	taccatttag	ttgggcactc	1140
taaggagact	gccggtgata	aaccggagga	aggtggggac	gacgtcaagt	catcatggcc	1200
cttatgggta	gggctacaca	cgtgctacaa	tggccggtac	agagggccgc	aaactcgcga	1260
gagtaagcta	atcccttaaa	gccggtccta	gtccggattg	cagtctgcaa	ctcgactgca	1320
tgaagctgga	atcgctagta	atcgcggatc	agaatgccgc	ggtgaattcg	ttcccgggcc	1380
ttgtacacac	cgcccgtcac	accatgggag	tgggttgcaa	aagaagtggg	taggctaacc	1440
	cgctcaccac					1500
	cctggggctg					1532

<210> 2

1528 <211>

<212> DNA

Cycloclasticus pugetii <213>

<400>

agagtttgat catggctcag attgaacgct ggcggcatgc ctaacacatg caagtcgaac 60 ggaaacgatg ctagcttgct agcaggcgtc gagtggcgga cgggtgagta atgcatagga 120 atctacctaa tagtgtggga caacctggtg aaaaccaggc taataccgca taatccctac 180 ggggcaaagc aggggacctt cgggccttgc gctaatagat gagcctatgt cggattagct 240

agttggtgag	gtaatggctc	accaaggcaa	cġatccgtag	ctggtttgag	aggatgatca	300
	gactgagaca					360
	gaaactctga					420
	cagtagggag					480
	gcaccggcta					540
	attactgggc					600
	caacctggga					660
agtggaattt	caggtgtagc	ggtgaaatgc	gtagatatct	gaaggaacac	cagtggcgaa	720
	tggaccaaca					780
	gtagtccacg					840
	staacgcaat					900
caaatgaatt	gacgggggcc	cgcacaagcg	gtggagcatg	tggtttaatt	cgatgcaacg	960
	tacctaccct					1020
gggaactctg	atacaggtgc	tgcatggctg	tcgtcagctc	gtgtcgtgag	atgttgggtt	1080
aagtcccgta	acgagcgcaa	cccttatcct	tagttgctac	catttagttg	ggcactctaa	1140
ggagactgcc	ggtgataaac	cggaggaagg	tggggacgac	gtcaagtcat	catggccctt	1200
	ctacacacgt					1260
taagctaatc	ccttaaagcc	ggtcctagtc	cggattgcag	tctgcaactc	gactgcatga	1320
agctggaatc	gctagtaatc	gcggatcaga	atgccgcggt	gaattcgttc	ccgggccttg	1380
tacacaccgc	ccgtcacacc	atgggagtgg	gttgcaaaag	aagtgggtag	gctaacttcg	1440
					ggtagcccta	1500
ggggaacctg	gggctggatc	acctcctt				1528

<sup>&</sup>lt;210> 3 <211> 1529 <212> DNA

<213> Cycloclasticus pugetii

<220>

<221> misc feature

<222> (1100)..(1101)

 $\langle 223 \rangle$  n = a, c, g, t (all four bases)

<400> agagtttgat catggctcag attgaacgct ggcggcatgc ctaacacatg caagtcgaac 60 ggaaacgatg ctagcttgct agcaggcgtc gagtggcgga cgggtgagta atgcatagga 120 180 atctacctaa cagtggggga caacctggtg aaaaccagsc taataccgca taatccctaa cgggcaaagc aggggacctt cgggccttgc gctaatagat gagcctatgt cggattagct 240 300 agttggtgag gtaatggccc accaaggcaa cgatccgtag ctggtttgag aggatgatca gccacactgg gactgagaca cggcccagac tcctacggga ggcagcagtg gggaatattg 360 cacaatggag gaaactctga tgcagcaatg ccgcgtgtgt gaagaaggcc ttagggttgt 420 aaagcacttt cagtagggag gaaaagttta aggttaataa ccttaggccc tgacgttacc 480 540 tacagaagaa gcaccggcta actccgtgcc agcagccgcg gtaatacgga ggggtgcaag cgttaatcgg aattactggg cgtaaagcgc gcgtaggcgg ttaaacaagt cagatgtgaa 600 agccccgggc tcaacctggg aactgcattt gaaactgttt agctagagtg tggtagagga 660 720 gagtggaatt tcaggtgtag cggtgaaatg cgtagatatc tgaaggaaca ccagtggcga aggcggctct ctggaccaac actgacgctg aggtgcgaaa gcgtgggtag caaacgggat 780 tagatacccc ggtagtccac gccgtaaacg atgtcaacta actgttgggc gggtttccgc 840 ttagtggtgc astaacgcaa taagttgacc gcctggggag tacggccgca aggctaaaac 900 960 tcaaatgaat tgacggggc ccgcacaagc ggtggagcat gtggtttaat tcgatgcaac gcgaagaacc ttacctaccc ttgacataca gagaactttc tagagataga ttggtgcctt 1020 cgggaactct gatacaggtg ctgcatggct gtcgtcagct cgtgtcgtga gatgttgggt 1080 1140 taagtcccgt aacgagcgcn nycttatcct tagttgctac catttagttg ggcactctaa ggagactgcc ggtgataaac cggaggaagg tggggacgac gtcaagtcat catggccctt 1200

atgggtaggg	ctacacacgt	gctacaatgg	ccggtacaga	gggccgcaaa	ctcgcgagag	1260
taagctaatc	ccttaaagcc	ggtcctagtc	cggattgcag	tctgcaactc	gactgcatga	1320
agctggaatc	gctagtaatc	gcggatcaga	atgccgcggt	gaattcgttc	ccgggccttg	1380
tacacaccgs	ccgtcacacc	atgggagtgg	gttgcaaaag	aagtgggtag	gctaaccttc	1440
gggaggccgc	tcaccacttt	gtgattcatg	actggggtga	agtcgtaaca	aggtagccct	1500
aggggaacct	ggggctggat	cacctcctt				1529

<210> 4
<211> 1526
<212> DNA
<213> Cycloclasticus pugetii

<220>
<221> misc\_feature
<222> (840)..(1300)
<223> n = a, c, g, t (all four bases)

<400> agagtttgat catggctcag attgaacgct ggcggcatgc taacacatgc aagtcgaacg 60 gaaacgatgc tagcttgcta caggcgtcga gtggcggacg ggtgagtaat gcataggaat 120 ctacctaata gtgggggaca acctggtgaa aaccagctaa taccgcataa tccctacggg 180 240 gcaaagcagg ggaccttcgg gccttgcgct aatagatgag cctatgtcgg attagctagt tggtgaggta atggctcacc aaggcaacga tccgtagctg gtttgagagg atgatcagcc 300 acactgggac tgagacacgg cccagactcc tacgggaggc agcagtgggg aatattgcac 360 420 aatggaggaa actctgatgc agcaatgccg cgtgtgtgaa gaaggcctta gggttgtaaa gcactttcag tagggaggaa aagtttaagg ttaataacct taggccctga cgttacctac 480 540 agaagaagca ccggctaact ccgtgccagc agccgcggta atacggaggg tgcaagcgtt 600 aatcggaatt actgggcgta aaagcgcgcg taggcggtta aacaagtcag atgtgaaagc cccgggctca acttgggaac tgcatttgaa actgtttagc tagagtgtgg tagaggagag 660

tggaatttca	ggtgtagcgg	tgaaatgcgt	aģatatctga	aggaacacca	gtggcgaagg	720
cggctctctg	gaccaacact	gacgctgagg	tgcgaaagcg	tgggtagcaa	acgggattag	780
ataccccggt	agtccacgcc	gtaaacgatg	tcaactaact	gttgggcggg	tttccgctta	840
gtggtgcant	aacgcaataa	gttgaccgcc	tggggagtac	ggccgcaagg	ctaaaactca	900
aatgaattga	cgggggcccg	cacaagcggt	ggagcatgtg	gtttaattcg	atgcaacgcg	960
aagaacctta	cctacccttg	acatacagag	aactttctag	agatagattg	gtgcttcggg	1020
aactctgata	caggtgctgc	atggctgtcg	tcagctcgtg	tcgtgagatg	ttgggttaag	1080
tcccgtaacg	agcgcaaccc	ttatccttag	ttgctaccat	ttagttgggc	actctaagga	1140
gactgccggt	gataaaccgg	aggaaggtgg	ggacgacgtc	aagtcatcat	ggcccttatg	1200
ggtagggcta	cacacgtgct	acaatggccg	gtacagaggg	ccgcaaactc	gcgagagtaa	1260
gctaatccct	taaagccggt	cctagtccgg	attgcagtct	gcaactcgac	tgcatgaagc	1320
tggaatcgct	agtaatcgcg	gatcagaatg	ccgcggtgaa	ttcgttcccg	ggccttgtac	1380
acaccgcccg	tcacaccatg	ggagtgggtt	gcaaaagaag	tgggtaggct	aacttcggga	1440
ggccgctcac	cactttgtga	ttcatgactg	gggtgaagtc	gtaacaaggt	agccctaggg	1500
gaacctgggg	ctggatcacc	tcctta				1526

<210> 5

<211> 18

<212> DNA

<213> Artificial

<220>

<223> Primers

<400> 5

ggaaacccgc ccaacagt

<210> 6

<211> 20

<212> DNA

<213> Artificial

18

<220> <223>	Primers	
	6 acta agcggaaacc	20
<210><211><212><212><213>		
<220> <223>	Primers	
<400> ggaaac	7 ccgc ccaacagttg caccactaag cggaaacc	38
<211> <212>		
<220> <223>	Primers	
1100	8 tgat cctggctcag	20
<210><211><211><212><213>	18	
<220> <223>	Primers	
<400>	9 aggtg atccagcc	18